



# GARDEN RETAINING WALL BLOCKS

*"Higher walls at lower costs"*



- DO IT YOURSELF
- NO MORTAR REQUIRED
- ECONOMICAL TO BUILD
- LOW MAINTENANCE
- STRUCTURALLY SOUND

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Garden Retaining Wall Blocks are a strong, durable retaining wall. Garden Retaining Wall Blocks interlock to form attractive walls which can achieve greater wall heights due to their slightly stepped back design. Formerly known as Norfolk retaining wall blocks, the Garden Retaining Wall Blocks are much easier to use, the simple connection methods suit DIY installers. Ideal for garden walls or alternatively commercial & landscape retaining walls up to 3 metres high subject to engineers design.

# INSTALLATION GUIDE



## Step 1 - Base Preparation

Dig out trench approx. 200mm deep. The trench should be 600mm wide. Place and well compact 100mm to 200mm of fine crushed rock (gravel). This base thickness depends on the wall height e.g. 150mm thick for 1 metre high, extra thickness for higher walls may be required, subject to engineers design.



## Step 2 - Sand Base

Spread 25mm of either sharp sand or metal dust over the compacted base. This should be in a straight line and checked with a level. If the wall is tapered, run a straight line at the desired finish level, then gauge down at multiples of 180mm.



## Step 3 - Laying 1<sup>st</sup> Course

The first block course is now bedded into the sand bed. The use of a level and string line is recommended to ensure that the first course is laid correctly. For walls up to 1 metre high, make sure at least 100mm of the first block course is buried below the finished ground level. Allow approx. 200mm for walls over 1 metre high and 300mm for walls over 2 metres high. Compact gravel along the front of the blocks to stabilise.



## Step 4 - Drainage & Backfill

Where an agpipe or strip drain is used, place behind base of first course. Backfill behind the blocks using a clean free draining material (e.g. blue metal). Allow 300mm for walls over 1 metre. Now compact backfill material thoroughly to remove all voids. If backfill is needed behind the drainage area, existing site soils may be used. (Do not use heavy clay.) Do not use soft or wet clay to backfill. Be careful not to mechanically compact too close to the wall.



## Step 5 - Laying Additional Courses

Lay the second and subsequent courses following the same procedure e.g. use the correct backfill material. Continue to lay and compact behind each block course.

**Curved Walls** – If building a curved wall, be conscious that the length of courses will vary for a concave or convex wall. E.g.: the course length will shorten if the wall is convex and lengthen if concave.

**Minimum Diameter** – 1900mm (internal dimension). This is the minimum diameter. Adjust lower courses allowing for 50mm step back.

### Maximum Wall Heights For Garden Retaining Wall Block Gravity Walls

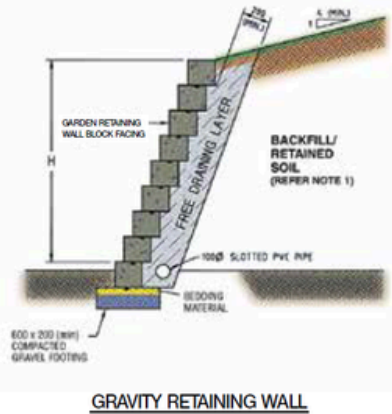
- Garden Retaining Wall Block walls that comply with the maximum wall heights shown in the design tables can be built as gravity walls (refer to construction notes). These walls use the weight and interlocking mechanisms of the blocks to retain an embankment.
- For higher walls, subject to soil conditions and your engineers design, greater wall heights can be achieved by using no fines concrete backfill or building terraced walls. When considering terraced walls (tiered walls), ensure that there is adequate set back distance from the top of the lower wall and the start of the next wall so as the lower wall is not carrying the load of the upper wall. Ideally this distance should be a multiple of 1.2 of the lower wall height

# DESIGN GUIDE

## Garden Wall Retaining Block Unreinforced Retaining Walls (Figure 1)

Maximum Wall Height 'H' (m)		
Backslope Conditions/Loadings	Wall Height	Retained Soil Types
Level with: No Surcharge	1.0	Type 1
	1.4	Type 2
	1.6	Type 3
Level with: Domestic Vehicles	0.8	Type 1
	1.0	Type 2
	1.2	Type 3
1:4 with: No Surcharge	0.8	Type 1
	1.0	Type 2
	1.2	Type 3
1:4 with: Domestic Vehicles	0.6	Type 1
	0.8	Type 2
	1.0	Type 3

\*Increased wall heights may be achieved using no-fines concrete backfill.



(FIGURE 1)

# CONSTRUCTION NOTES

## Soil Type Descriptions

### TYPE 1 SOILS

Includes soft and firm clay, fine sands, silty clays. Internal Friction Angle  $\geq 20^\circ - 24^\circ$

### TYPE 2 SOILS

Includes stiff sandy clays and gravelly clays. Internal Friction Angle  $\geq 25^\circ - 30^\circ$

### TYPE 3 SOILS

Includes FCR, rock, sandstone and gravels. Internal Friction Angle  $\geq 30^\circ+$

1. The following assumptions have been made regarding soil properties:

- Infill Soil Types – As Above: Internal Friction Angle  $\geq 20^\circ - 30^\circ+$
- Bearing Pad – Compacted density angle: at least 18.6 kg/m<sup>3</sup>
  - Effective internal friction angle: at least 37°
  - Effective Cohesion: at least 5kPa

2. Caution is required when using heavy or dry clays as retained soil or backfill.

3. Surcharge loads are as follows: Domestic Vehicles – 500 kg/m<sup>2</sup> (5 kPa)

Heavy Vehicles – To be separately assessed

4. The wall footing shall consist of a compacted, well-graded gravel footing 600mm wide x 150 mm deep for walls up to 1 metre high, with the first course at least 100mm below finished ground level. For walls over 1 metre high, an engineer will consider extra depth in the gravel footing along with a minimum 200mm embedment of the first course, subject to soil conditions.


5. Drainage shall be supplied in the form of a slotted PVC ag-pipe with geotextile sock drain (fall at 1:100 min.) or with weep holes. A 300mm drainage layer of uniformly graded gravel shall be provided behind the wall.

6. The Unreinforced soil design table should be used for low, non-structural garden walls only.

7. For backslope conditions greater than 1 in 4, seek specific engineering advice.

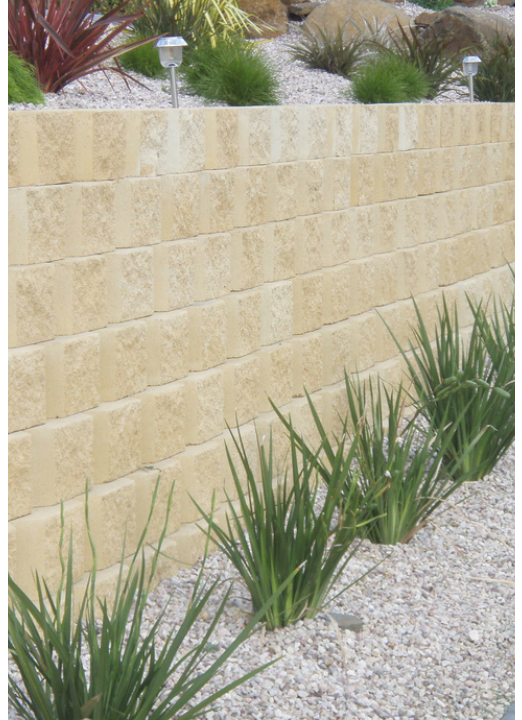
8. Vehicle traffic should be allowed no closer than 1 metre behind the wall.

**Engineering - To comply with most council requirements, please seek specific engineering advice for walls over 1 metre high or for low walls carrying vehicle traffic, etc.**

GARDEN RETAINING WALL BLOCKS	COLOURS	NUMBER PER M2	NUMBER PER PALLET	NUMBER PER TONNE
 <b>390x190x180mm</b>	Gunmetal, Limestone	14	90	43



Gunmetal



Limestone

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